

REMARKS

This responds to the Non-Final Office Action dated 6 January 2009. Claims 1, 8, and 10 have been amended and claim 11 has been canceled in order to further clarify a portion of the scope sought to be patented. New claims 16-23 have also been added. No new matter has been added. Accordingly, claims 1, 3-8, 10, and 12-23 are presently pending in the application, each of which Applicant believes is in condition for allowance. Applicant respectfully requests reexamination and reconsideration in light of the above amendments and the following remarks.

For simplicity and clarity purposes in responding to the Office Action, Applicant's remarks are primarily focused on the rejections applied to the independent claims (*i.e.*, claims 1 and 8) as outlined in the Office Action with the understanding that the dependent claims are patentable for at least the same reasons (and in most cases other reasons) that the independent claims are patentable. Applicant expressly reserves the right to argue the patentability of the dependent claims separately in any future proceedings.

Claim Rejections – 35 U.S.C. § 103

In the Action, Examiner rejected claims 1, 3-8, and 10-14 under 35 U.S.C. § 103(a) as allegedly being unpatentable over pp. 495-502 of a publication to Hall et al. entitled "A Virtual Operating System" ("Hall") in view of U.S. Patent Publication No. 2002/0092003 to Calder et al. ("Calder"). Additionally, Examiner rejected claim 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hall in view of Calder, and further in view of U.S. Patent No. 6,192,471 to Pearce ("Pearce"). Applicant traverses these rejections for at least the reasons set forth below.

A. Claims 1 and 8

For at least the reasons discussed below, Hall and Calder, taken either alone or in combination, fail to disclose, teach, or suggest each of the claim elements recited in independent claims 1 and 8.

According to Federal Circuit precedent, the burden of establishing a *prima facie* case of obviousness under 35 U.S.C. § 103 rests squarely on the shoulders of the examiner. To establish a *prima facie* case of obviousness, the reference (or references when combined) must teach or suggest each and every claim element. *See, e.g., In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *accord*. MPEP 2143.03. Indeed, as the Board of Patent Appeals and Interferences has recently confirmed in a 2007 decision, a proper obviousness determination requires that an Examiner make “a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art.” *See In re Wada and Murphy*, Appeal 2007-3733, *citing In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added).

Additionally, it is established law that one “cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *Ecolochem, Inc. v. Southern Cal. Edison Co.*, 227 F.3d 1361, 1371, 56 USPQ2d 1065 (Fed. Cir. 2000) (citing *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1780, 1783 (Fed. Cir. 1988)). Indeed, “[c]ombining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight.” *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Moreover, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Claims 1 and 8 recite, *inter alia*, “injecting a DLL into an application that is executed under the virtual OS environment.” Claim 1 additionally recites, *inter alia*, redirecting, via the DLL, attempts of the application to access the base OS file system and the base OS registry to the virtual OS file system and the virtual OS registry.

Hall fails to disclose, teach, or even suggest “injecting a DLL into an application that is executed under the virtual OS environment,” as conceded in the Office Action. Office Action, page 5.

Calder likewise fails to disclose, teach, or suggest “injecting a DLL into every application that is executed.” Instead, DLLs disclosed in Calder are loaded into a Windows API rather than being injected into applications. For example, Calder teaches that “when a program runs under the Windows operating system, it accesses the operating system via the Windows API, which is a collection of DLL’s.” Calder, paragraph [0094]. Calder further states that “each executable binary contains an import table listing all of the dynamically linked library’s (DLLs) that are used by an application 405.” Calder, paragraph [0096].

Calder additionally states that “[w]hen a program starts executing, the operating system loads the DLLs in the order they are listed in the import table.” Calder, paragraph [0096]. As described in Calder, the DLLs are not injected into the applications themselves, but are instead merely maintained in the Windows API. Accordingly, for at least the aforementioned reasons, Applicant respectfully requests that the rejection of dependent claims 1 and 8 be withdrawn.

B. Claim 4

Claim 4 depends from independent claim 1. By virtue of this dependency, Applicant submits that claim 4 is allowable for at least the same reasons given above with respect to claim 1. In addition, claim 4 recites subject matter not disclosed in Hall or Calder. For example, claim 4 recites, *inter alia*, “multiple virtual OS environments within the base OS.”

Hall fails to disclose, teach, or suggest a system that includes “multiple virtual OS environments within the base OS.” Rather, Hall merely teaches a system that is limited to a single virtual machine that constitutes an interface wrapper on top of a real operating system. *See, e.g.*, FIG. 1 of Hall.

Calder fails to cure the deficiencies of Hall. As discussed above, Calder fails to disclose, teach, or suggest even a single virtual OS environment, let alone “multiple virtual OS environments,” as recited in claim 4. Accordingly, for at least the aforementioned reasons, Applicant respectfully requests that the rejection of dependent claim 4 be withdrawn.

C. Claim 15

Claim 15 depends from independent claim 8. By virtue of this dependency, Applicant submits that claim 15 is allowable for at least the same reasons given above with respect to claim 8. In addition, claim 15 recites subject matter not disclosed in Hall, Calder, or Pearce. For example, claim 15 recites, *inter alia*, “wherein the predetermined directory is a CD/DVD drive in the base OS file system.”

In the Office Action, Examiner cites to FIG. 4 of Pearce as allegedly showing a predetermined directory that is “a CD/DVD drive in the base OS file system.” However, Pearce fails to disclose, teach, or suggest a “CD/DVD drive,” as alleged by Examiner, but rather, Pearce describes “a region of a native file system 300 on a physical disk drive for usage as a virtual drive 330.” Calder, column 5, lines 34-37. Calder describes that “physical drive 230 has the form of an 800 megabyte hard disk drive.” Calder, column 6, lines 36-40. As made clear by Calder, the physical disk drive is not a “CD/DVD drive,” as recited in claim 15, but is instead a hard disk drive. Accordingly, for at least the aforementioned reasons, Applicant respectfully requests that the rejection of dependent claim 15 be withdrawn.

D. Claims 3, 5-7, 10, and 12-14

Claims 3, 5-7, 10, and 12-14 depend from independent claims 1 and 8. By virtue of this dependency, Applicant submits that claims 3, 5-7, 10, and 12-14 are allowable for at least the same reasons given above with respect to claims 1 and 8. In addition, Applicant submits that claims 3, 5-7, 10, and 12-14 are further distinguished over cited art by the additional elements

recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 3, 5-7, 10, and 12-14 under 35 U.S.C. § 103 be withdrawn, and these claims be allowed.

New Claims

Support for new claims 16-23 can be found variously throughout the specification, including, for example, page 4, lines 1-7 and lines 21-24; page 4, line 21 to page 5, line 13; page 6, line 26 to page 7, line 2; and page 8, lines 3-15. Applicant submits that each of these new claims is clearly distinguishable from the applied art of record for at least the reasons set forth below.

A. *Claim 16*

Hall, Calder, and Pearce fail to disclose, teach, or suggest each of the claim elements recited in independent claim 16. For example, the cited references fail to disclose, teach, or suggest “injecting a dynamic link library (DLL) into an application” and “redirecting, via the DLL, an attempt by the application to access the base OS to at least one of: the virtual OS file system of the at least one virtual OS environment; the virtual OS registry of the at least one virtual OS environment,” as recited in claim 16.

As discussed above, Hall fails to disclose, teach, or suggest “injecting a DLL into an application,” as conceded in the Office Action. Office Action, page 5. As further discussed above, Calder likewise fails to disclose, teach, or suggest “injecting a DLL into an application” and “redirecting, via the DLL, an attempt by the application to access the base OS to at least one of: the virtual OS file system of the at least one virtual OS environment; the virtual OS registry of the at least one virtual OS environment.”

B. *Claim 17*

Claim 17 depends directly from independent claim 16. By virtue of this dependency, Applicant submits that claim 17 is allowable for at least the same reasons given above with respect to claim 16. In addition, claim 17 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 17 recites, *inter alia*:

“determining that the application should be run under the virtual OS environment instead of the base OS, wherein the DLL performs the determining;

scanning a function import table of the application, wherein redirecting the attempt by the application comprises redirecting, via the DLL, file system and registry calls from the application to functions within the injected DLL, wherein the DLL performs the scanning.”

Hall, Calder, and Pearce fail to disclose, teach, or suggest “determining that the application should be run under the virtual OS environment instead of the base OS, wherein the DLL performs the determining” and “scanning a function import table of the application, wherein redirecting the attempt by the application comprises redirecting, via the DLL, file system and registry calls from the application to functions within the injected DLL, wherein the DLL performs the scanning,” as recited in claim 17.

C. Claim 18

Claim 18 depends directly from independent claim 16. By virtue of this dependency, Applicant submits that claim 18 is allowable for at least the same reasons given above with respect to claim 16. In addition, claim 18 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 18 recites, *inter alia*:

“determining that the application should be run under the virtual OS environment instead of the base OS, wherein the DLL performs the determining;

calling a function of the injected DLL rather than calling an API of the base OS, wherein the DLL performs the calling;

modifying at least one parameter from a calling function of the application to direct the at least one parameter to a location of the virtual OS environment, wherein the DLL performs the modifying.”

Hall, Calder, and Pearce fail to disclose, teach, or suggest “determining that the application should be run under the virtual OS environment instead of the base OS, wherein the DLL performs the determining,” “calling a function of the injected DLL rather than calling an API of the base OS, wherein the DLL performs the calling,” and “modifying at least one parameter from a calling function of the application to direct the at least one parameter to a location of the virtual OS environment, wherein the DLL performs the modifying,” as recited in claim 18.

D. Claim 19

Claim 19 depends directly from dependent claim 18 and indirectly from independent claim 16. By virtue of this dependency, Applicant submits that claim 19 is allowable for at least the same reasons given above with respect to claims 16 and 18. In addition, claim 19 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 19 recites, *inter alia*:

“after modifying the at least one parameter, calling the API of the base OS with the at least one modified parameter, wherein the DLL performs the calling;

receiving information from the API of the base OS, wherein the DLL performs the receiving;

modifying the information from the API of the base OS to convert the information back from a virtual OS environment location, wherein the DLL performs the modifying the information;

returning the information to the calling function of the application, wherein the DLL performs the returning.”

Hall, Calder, and Pearce fail to disclose, teach, or suggest “after modifying the at least one parameter, calling the API of the base OS with the at least one modified parameter, wherein

the DLL performs the calling,” “receiving information from the API of the base OS, wherein the DLL performs the receiving,” “modifying the information from the API of the base OS to convert the information back from a virtual OS environment location, wherein the DLL performs the modifying the information,” and “returning the information to the calling function of the application, wherein the DLL performs the returning,” as recited in claim 19.

E. Claim 20

Claim 20 depends directly from independent claim 16. By virtue of this dependency, Applicant submits that claim 20 is allowable for at least the same reasons given above with respect to claim 16. In addition, claim 20 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 20 recites, *inter alia*, “the attempt to access the base OS comprises an attempt to install at least one file in the base OS file system.” Hall, Calder, and Pearce fail to disclose, teach, or suggest that “the attempt to access the base OS comprises an attempt to install at least one file in the base OS file system,” as recited in claim 20.

F. Claim 21

Claim 21 depends directly from dependent claim 20 and indirectly from independent claim 16. By virtue of this dependency, Applicant submits that claim 21 is allowable for at least the same reasons given above with respect to claims 16 and 20. In addition, claim 21 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 21 recites, *inter alia*, “the attempt to install the at least one file in the base OS file system comprises an attempt to reboot the computer.” Hall, Calder, and Pearce fail to disclose, teach, or suggest that “the attempt to install the at least one file in the base OS file system comprises an attempt to reboot the computer,” as recited in claim 21.

G. Claim 22

Claim 22 depends directly from dependent claim 20 and indirectly from independent claim 16. By virtue of this dependency, Applicant submits that claim 22 is allowable for at least the same reasons given above with respect to claims 16 and 20. In addition, claim 22 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 22 recites, *inter alia*:

“shutting down the application running under the at least one virtual OS environment;

after shutting down the application, installing the at least one file in the virtual OS file system of the at least one virtual OS environment;

after installing the at least one file, executing the application under the at least one virtual OS environment.”

Hall, Calder, and Pearce fail to disclose, teach, or suggest “shutting down the application running under the at least one virtual OS environment,” “after shutting down the application, installing the at least one file in the virtual OS file system,” and “after installing the at least one file, executing the application under the at least one virtual OS environment,” as recited in claim 22.

H. Claim 23

Claim 23 depends directly from dependent claim 22 and indirectly from claims 16 and 20. By virtue of this dependency, Applicant submits that claim 23 is allowable for at least the same reasons given above with respect to claims 16, 20, and 22. In addition, claim 23 recites subject matter not disclosed in Hall, Calder, and Pearce. For example, claim 23 recites, *inter alia*, “wherein: shutting down the application running under the at least one virtual OS environment and installing the at least one file in the virtual OS file system of the at least one virtual OS environment are conducted while the base OS is running.” Hall, Calder, and Pearce fail to disclose, teach, or suggest “wherein: shutting down the application running under the at

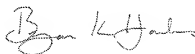
least one virtual OS environment and installing the at least one file in the virtual OS file system of the at least one virtual OS environment are conducted while the base OS is running.”

Conclusion

For at least the foregoing reasons, Applicant believes that each of the presently pending claims in this application is in immediate condition for allowance. Accordingly, Applicant respectfully requests a favorable action on the merits. If the Examiner has any further comments or suggestions, Applicant invites the Examiner to contact the undersigned attorney to expedite the handling of this matter.

Applicant expressly disclaims all arguments, representations, and/or amendments presented or contained in any other patent or patent application, including any patents or patent applications claimed for priority purposes by the present application or any patents or patent applications that claim priority to this patent application. Moreover, all arguments, representations, and/or amendments presented or contained in the present patent application are only applicable to the present patent application and should not be considered when evaluating any other patent or patent application.

Respectfully submitted,



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